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(71) Applicant (for all designated States except US): WCL WIRELESS COMMERCE LTD. OY [FI/FI]; Otakaari 20, Fin-02150 Espoo (FI).		
(72) Inventor; and		
(75) Inventor/Applicant (for US only): KIVIMÄKI, Björn [FI/FI]; Katriinantie 46, Fin-01760 Vantaa (FI).		
(74) Agent: BERGGREN OY AB; P.O. Box 16, FIN-00101 Helsinki (FI).		
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(54) Title: METHOD AND SYSTEM FOR PERFORMING ELECTRONIC AUCTIONS		
(57) Abstract		
<p>The present invention relates generally to a system for performing electronic sale of products. The products may be new goods, secondary market goods, services, collectibles etc. The present invention relates more particularly to implementing electronic auctions and to measures for making their use easier for an average user. One idea of the present invention is providing the communication between the user and the auction management system using short message service (SMS) of a mobile communication system (214, 250, 260, 262, 270, 280, 290). The short messages can be transferred from a mobile phone to the mobile center in order to make conditional purchase offers, and short messages from the mobile center to the mobile phone can be used for giving information on products, current prices and accepted offers. The communication between the mobile center and the auction management system (290) can also be based on short messages, or some type of data connection. The user of the auction service does not need to have a continuous telephone connection to the service provider. The user does neither need to make specific agreements with the service provider or a bank for the purchase payments in order to use the auction service.</p>		

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METHOD AND SYSTEM FOR PERFORMING ELECTRONIC AUCTIONSField of the Invention

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The present invention relates generally to a method and a system for performing electronic sale of products. The products may be new goods, secondary market goods, services, collectibles etc.. The present invention relates more particularly to implementing electronic auctions and to measures for making their use easier for a user.

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Background of the invention

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Most systems for processing the electronic sale of products are seller-driven, whereby the seller prices, packages, configures and offers the product for sale, and the buyer decides whether or not to accept the seller's offer. It is also prior known to arrange electronic auctions, wherein a seller and/or a buyer can make offers to sell/buy a determined product. When the offers to sell and buy meet, a transaction is recorded between the seller and the buyer. For example, the auction management system may process each received buying offer to determine whether one or more counterparts are willing to accept the offer. If a seller accepts a given purchase offer, and ultimately delivers goods complying with the buyer's offer, the buyer is bound on behalf of the accepting seller, to form a legally binding contract. A purchase offer thus is a binding offer containing one or more conditions.

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In order to guarantee the buying offers the buyers may have, for example, a general-purpose account, such as a credit or debit account. The buyer must therefore have an agreement with a bank and the auction service provider for the payment of purchases. On the other hand, the delivery and quality of the products to be sold can be guaranteed by the dealer/authenticator which can be part of the auction management system or another third party having knowledge of the subject goods. The dealer/authenticator may also serve as the distribution point for the products. A prior art system for implementing electronic sale is disclosed in patent application document WO 99/23595.

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Figure 1 illustrates a prior art purchase management system 100 for receiving and processing conditional purchase offers (CPOs) for collectibles from one or more

buyers, such as buyers 110 and 120. The CPO management system 100 processes each received CPO to determine whether one or more sellers, such as sellers 130 and 140, are willing to accept a given CPO. If a seller accepts a given CPO, and delivers goods complying with the buyer's CPO, the collectible CPO management 5 system 100 binds the buyer 110 on behalf of the accepting seller 130, to form a legally binding contract.

Once a CPO is accepted, but prior to completing the transaction, the goods are 10 preferably forwarded to a dealer/authenticator, such as dealer/authenticator 150 or 160, for evaluation. The dealer/authenticator 150 can be part of the collectible CPO management system 100 or another third party having knowledge of the subject goods. The dealer/authenticator 150 preferably validates, authenticates and 15 optionally guarantees the goods, while also serving as the distribution point for the goods sold by the CPO management system 100. As used herein, validation establishes that the item actually exists. Authentication proves that the item is in the condition stated by the seller. The guarantee, if desired, insures that the buyer has not purchased a fake or counterfeit item. Thus, once an item is delivered to the dealer/authenticator 150 and approved, the dealer/authenticator 150 can deliver the item to the buyer and authorize payment to the accepting seller.

20 The collectible CPO management system 100 allows a number of sellers to conditionally accept each CPO. In this manner, the collectible CPO management system 100 ensures that at least one of the accepting sellers will have the collectible item in the condition specified by the buyer. Preferably, each of the accepting 25 seller(s) are prioritized into a hierarchy based on predetermined criteria. For example, sellers may be assigned a priority in the hierarchy based on the order in which their acceptances are received by the CPO management system 100. Alternatively, priority may be determined based on the geographical proximity of each accepting seller to the buyer. In addition, the priority may be based on the 30 performance of each accepting seller for previous transactions.

A CPO is thus a binding offer containing one or more conditions submitted by a 35 buyer for the purchase of goods, at a buyer-defined price. The CPO may be guaranteed, for example, using a generalpurpose account, such as a credit or debit account, maintained by an issuing bank, such as issuing bank 170 and 180. The conditions specified in a CPO may also include, for example a description of the goods and a required quality.

As shown in FIG. 1, the CPO management system 100 includes a central controller 190 for processing the information in a manner described above.

5 Each buyer and seller contacts the CPO management system 100, for example, by means of telephone line, in-person contact or through an agent, and provides the CPO management system 100 with the terms of their CPOs, or the list of available items the seller desires to sell, as appropriate. Each buyer and seller may employ a general-purpose computer, for communicating with the collectible CPO management system 100. The general-purpose computer of each buyer and seller is 10 preferably comprised of a processing unit, a modem, memory means and any software required to communicate with the collectible CPO management system 100.

15 There are certain drawbacks related with the described prior art solutions to implement an electronic auction. The communication between the auction management system and the user is carried out via a telephone line. The user may have a computer with a modem, and the user makes a call to the auction service provider. Since the user may make binding offers through this telephone connection, there must be an authentication procedure before accepting the user to the electronic 20 sale service. Before this kind of an authentication procedure is possible, there must be an agreement between the user and the electronic sale provider, and the electronic sale provider must give security codes for establishing the connections. A further problem with the prior art solutions is that one needs to have a payment agreement with the auction service provider and a bank as described above. Therefore 25 it may be too troublesome for ordinary potential users to try and start using the auction services.

30 In order to get information on the products that are in sale and in order to make offers, the user needs to have continuous telephone connection to the auction management system. A continuous connection further causes high expenses to the user. It also takes a lot of time for the user to follow the auction, and if the communication is made with the user's computer, the user has to stay by the computer for long periods. One solution could be using mobile terminals with wireless modems. However, this only makes it possible to follow the auction in 35 different places, but the user still has to stay with the computer for long periods. The wireless data connections also tend to be even more expensive than data connections on a fixed telephone line. One possibility could also be to make short

connections every now and then, but the drawback with this solution is that the right instant to make an offer for a product may be missed.

Summary of the Invention

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The objective of the present invention is to create a solution for providing electronic auctions wherein the above mentioned problems of the prior art solutions are reduced or avoided.

- 10 10 One idea of the present invention is providing the communication between the user and the auction management system using short message service (SMS) of a mobile communication system. The short messages can be transferred from a mobile phone to the mobile communications center in order to transmit conditional purchase offers, and short messages from the mobile communications center to the mobile
- 15 15 phone can be used for giving information on products, current prices and accepted offers. The communication between the mobile center and the auction management system can also be based on short messages, or some other type of data connection.

A short message service means in this context a service of transferring data messages without creating a continuous point-to-point connection. A short message service is available in new digital mobile communication systems. An example of such a system is the GSM (Global System for Mobile communications).

The inventive solution has several advantages over the prior art solutions. The user
25 25 is able to follow an auction with a mobile phone in any place where there is a mobile communications system coverage. A user does not need to make a continuous data connection to the auction management system nor to follow an auction screen continuously; the user can get a short message information whenever there is a new product in sale, or whenever there is a new offer made. The user can
30 30 also get instant information on a possible acceptance of a user's offer. And if the user wishes to make a new conditional purchase offer, the user can send in real time a short message with the required offer information. There is no need to make a new data transfer connection involving possible unsuccessful attempts causing a harmful delay in transmitting the offer.

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A further important advantage with the present invention is that the payment of the bought products can be conveyed via the mobile system operator. When an offer is

made with a short message, the mobile system operator and the auction service provider gets the phone number of the subscriber connection where the short message has been sent. This is confirmed information on the subscriber and can therefore be used for confirming the buyer. The payment can be added in the 5 subscriber's telephone bill or the auction service provider can use the subscriber information for sending an invoice to the buyer. Therefore there is no need for separate payment agreements between a user, the auction service provider and a bank. The only agreement that may be needed is an agreement between the auction service provider and a mobile system operator for transaction of the payments. The 10 user can therefore start trying and using the auction service without any additional agreements.

The characterising features of the present invention are as follows:

- 15 A method for performing an electronic auction, comprising the steps of:
 - providing at least one potential buyer with information on a product in sale;
 - obtaining a purchase offer for a product from a potential buyer;
 - transferring the information on the purchase offer from the potential buyer to an auction management system;
- 20 providing an acceptance of said purchase offer;
 - wherein the step of transferring the information on the purchase offer from the potential buyer to the system comprises the steps of:
 - forming a short message including information on a new offer of the potential buyer;
- 25 transferring said short message from the buyer to the system; and
 - reading said information from said short message for determining the purchase offer of said potential buyer.

A system for performing electronic auctions, comprising:

- 30 means for providing at least one potential buyer with information on a product in sale;
 - means for obtaining a purchase offer for a product from a potential buyer;
 - means for receiving the information on the purchase offer from the potential buyer to an auction management system;
- 35 means for providing an acceptance of said purchase offer;
 - wherein the means receiving the information on the purchase offer from the potential buyer to the system comprises:

means for receiving a short message from the buyer to the system; and
means for reading said information on a new offer of the potential buyer from
said short message for determining the purchase offer of said potential buyer.

5 Preferred embodiments of the present invention are described in the dependent
claims.

A more complete understanding of the present invention, as well as further features
and advantages of the present invention, will be obtained by reference to the
10 following detailed description and drawings.

Brief Description of the Drawings

15 FIG. 1 is a schematic block diagram illustrating a prior art collectible
conditional purchase offer (CPO) management system;

FIG. 2 is a schematic block diagram illustrating an exemplary electronic auction
system according to the invention; and

20 FIG. 3 illustrates a flow diagram for an exemplary method for providing an
electronic auction according to the invention until the acceptance of a
conditional purchase offer,

25 FIG. 4 illustrates a flow diagram for an exemplary method for providing an
electronic auction according to the invention starting from the acceptance
of a conditional purchase offer, and

30 FIG. 5 illustrates an example of a short message for transmitting a conditional
purchase offer according to the invention.

Detailed Description

Figure 1 was described in the prior art section of the specification.

35 Figure 2 illustrates an exemplary embodiment of an electronic auction system in
accordance with the invention. The electronic auction system includes connection
ports for both Internet terminals and for mobile stations. A user 210 with an Internet

terminal 212 communicates with the electronic auction management system 230 via the Internet 240. The communication is, as in usual Internet connections, using HTTP and TCP/IP protocols. The auction management system 230 includes an MS SQL server 7 (234) and an MS IIS 4 Web-server (232). The communication 5 between the Internet terminal and the electronic auction management system can be implemented according to the prior art.

A customer 210 that uses the electronic auction service with a mobile station 214 connects to a mobile communication system. The mobile station has a wireless 10 signalling link to one of many base stations 262, further connected to a base station controller of the mobile communication system. A mobile communication system generally also includes mobile switching centers that interconnect the base station controllers into a mobile communication net 260. According to the present invention the mobile station 214 communicates electronic auction service information with the 15 mobile communication system using short messages.

The mobile communication system has also registers with e.g. subscriber information. Together with these registers the operator 280 of the mobile system provides a Short Message Services Center (SMSC) for storing and conveying the 20 short messages. The short messages are further transferred 290 between the mobile communication system and the electronic auction management system 230. The transfer can take place via the Internet 240 or some other communication link. The information may be transferred between the mobile communication system and the electronic auction management system in the form of short messages, or in some 25 other form.

It is clear that the electronic auction management system may comprise communication ports for many mobile communications systems that are provided by different operators. These mobile communications systems may also have different 30 communications standards such as GSM, GPRS or UMTS. Most digital mobile communications systems provide a short message service that is based on short messages that are transferred in the form of signalling without forming a continuous call connection.

35 The subscriber registers of a mobile communications system include information on accumulated value of calls for billing the subscribers. Except calls, the accumulated values may include payments also for other services or products. A user of a mobile

phone can thus buy products by calling to a certain telephone number, and the price of the call then includes the price of the bought product. The provider of the electronic auction services may therefore have an agreement with the mobile system operator according to which the payments of the purchases are added to the

5 accumulated value of calls/messages of the subscriber. Even if the payments are not directed through the mobile communications system operator, the auction service provider can use the information of the short message to authenticate the sender of the message and use it in a direct billing procedure.

10 The functional units in figure 2 are not explained in more detail, as they can be designed by a person skilled in the art using this description of the basic inventive idea. Also functional details as described with figure 1 can be applied.

15 Figure 3 illustrates a flow diagram of an exemplary method 300 for providing an electronic auction according to the invention. First in step 310 the auction service provider determines a product for sale in the electronic auction. The seller of the product usually also determines an upset price, below which the product can not be sold. This information is stored in the auction management system.

20 After the product in sale has been determined, the auction management system forms a short message which includes information on the product, step 320. This information may include a product type, an auction item code, and an upset price. This short message is then transmitted to mobile stations which are listed to take part in the auction, step 330. A user of a mobile station may, for example, send an initial short message to the auction management system informing that the user wants to take part in the auction (this step is not shown in the flow diagram). After receiving this initial message, the auction management system enters the mobile station identity information in said list.

25 After the mobile station of a potential buyer has received the short message of the product in sale, the buyer evaluates whether an offer should be made, step 330. If the buyer does not find the product information attractive, step 350, the buyer may remain waiting for new products for sale, step 352. When a new product comes for sale, steps 354, 310, the same steps as described above are repeated.

30 In step 340 the buyer may find the product information attractive but may still want to follow the offers of other buyers before making an offer, steps 350-354. When

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the buyer then decides to make an offer for the product the buyer writes a short message according to a determined form that includes information on the new offer and the product, step 360. If there is just one product in sale, it may be unnecessary to identify the product in the short message for the offer. The short message is then 5 transmitted from the buyers mobile station to the auction management system. The information of the short message is then read and stored in the register of the auction management system.

After the buyer has transmitted an offer to the auction management system, it may 10 happen that some other buyer gives a better offer for the product and the offer of said buyer is not accepted, step 390. In such a case the buyer has to make a new evaluation and decision on whether to give a next offer or not, step 340.

If there are no better offers, the auction management system may make a decision 15 that the buyer's offer is accepted. The auction management system may wait for a determined time period after an offer has been made, and, if there are no better offers given on that time period, the auction management system accepts the offer. Another possibility is that the acceptance is programmed to take place on a determined time instant. Whoever then has the highest offer at that moment will 20 have the offer accepted.

Figure 4 illustrates a flow diagram on steps after the acceptance of the offer in the method of Fig. 3. After the auction management system has accepted the offer, it forms a short message with the information on acceptance of the offer, step 410. 25 The auction management system then transmits the short message to the mobile station of the buyer thus indicating that the offer has been accepted, step 420.

It is important that there is a way for binding the buyer with the accepted offer to purchase said product. The auction service provider may identify the buyer's 30 payment and delivery information based on the short message that included the accepted offer. The short message usually includes the telephone number of the subscriber's mobile station. The auction service provider may get the name and address of the subscriber from the operator of the mobile communications system or the auction service provider may have its own list of subscriber information.

35 Since the short message from the buyer includes a certified telephone number of the subscriber, it is possible to carry out the billing procedure, step 440, and delivery of

the products, step 450, the without any complicated authentication of users of the auction service.

Figure 5 illustrates an example on a short message according to the invention. The

5 short message comprises a first identifier field 510 for identifying the product that the offer is made for. This identifier field may not be needed, if there is just one item for sale at any time. A second identifier field 530 includes the monetary amount that is offered for the product. A third identifier field 550 includes information for authenticating the buyer. This identifier field may not be needed, if

10 the buyer making the offer is identified in some other way, such as by means of the subscriber identifier that is transmitted together with the short message data. It is also possible to use more than one method for authenticating the user in order to achieve a high degree of security.

15 The identifier fields are separated with separating characters 520, 540. In this example the separating character is ":". The separating character can be any predetermined character or it may consist of more than one successive characters. The short message in this example has a maximum length of 160 characters. Usually all this data space is not needed for the offer data, so there is unused data space in

20 the short message, 560. There may also be other ways to recognize the identifier fields of the short message than using separating characters. One alternative possibility is to use predetermined locations for the different identifier fields in the short message. However, this solution is more difficult for the user because one would need to check that all the input data is in its correct place in the short

25 message.

As mentioned above, the short message usually includes, except the user input data, also information that identifies the subscriber connection where the short message is transmitted from, and information on the address (telephone number) where the

30 short message is transmitted to.

As described above, the present invention gives remarkable advantages over prior art systems for implementing an electronic auction. While short messages are used in informing the user about the products in sale and currently valid offers, the user gets the information instantly without any need to keep continuous telephone connection to the auction management system or continuously monitoring the auction screen.

While short messages are used in making offers, the user can make an offer quickly without any need to make a telephone connection and authentication procedures. The user does not need to make special agreements with banks or the auction service provider in order to start using the auction service. The user can attend to the

5 auction wherever the user's mobile phone is serviced. The user does not need to have a phone with Internet connection capabilities, and neither does the mobile communications system need to have a capability to provide Internet services.

It is to be understood that the embodiments and variations shown and described

10 herein are merely illustrative of the principles of this invention and that various modifications may be implemented by those skilled in the art without departing from the scope and spirit of the invention. Especially, it is to be understood that the present invention is not in any way restricted to the mentioned communications systems, but it can be applied to any digital communications system with the ability

15 to transfer short messages. And even if the described embodiments use a two-way communication with short messages, it is also possible to implement a system with just a one-way short message communication.

Claims

1. A method for performing an electronic auction, comprising the steps of:
providing at least one potential buyer with information on a product in sale;
5 obtaining a purchase offer for a product from a potential buyer;
transferring the information on the purchase offer from the potential buyer to
an auction management system;
providing an acceptance of said purchase offer;
wherein the step of transferring the information on the purchase offer from the
10 potential buyer to the system comprises the steps of:
forming a short message including information on a new offer of the potential
buyer;
transferring said short message from the buyer to the system; and
reading said information from said short message for determining the purchase
15 offer of said potential buyer.
2. A method according to claim 1, wherein said information on a new offer of the
potential buyer includes at least the following information:
 - product identifier,
 - offered monetary amount, and
 - buyer identifier.
3. A method according to claim 2, further comprising the step of
initiating a payment of said purchase, and the use of said buyer identifier to collect
25 funds from said buyer.
4. A method according to claim 1, wherein said product is a new article, a
secondary market article, service or a collectible.
- 30 5. A method according to claim 1, wherein the acceptance of the purchase offer
is based on a determined point of time.
6. A method according to claim 1, wherein the acceptance of the purchase offer
is based on a determined time period after the receiving the latest purchase offer.

7. A method according to claim 1, wherein the purchase offer identifiers are recognised based on the location of the concerned identifier field in the short message.

5 8. A method according to claim 1, wherein the purchase offer identifiers of the short message are recognised based on at least one separating character between two identifier fields.

10 9. A method according to claim 1, wherein the payment of the purchase is conveyed via the mobile system operator.

15 10. A method according to claim 7, wherein the buyer is identified on basis of an identifier of a subscriber connection in the mobile system, and said identifier is received from the mobile communications system within the short message.

20 11. A method according to claim 1, further comprising a step of transferring an initial short message from a mobile station to the auction management system and storing the mobile station identity information on a list of subscribers that take part in the auction.

25 12. A method according to claim 11, further comprising a step of transferring a termination short message from a mobile station to the auction management system and removing the mobile station identity information from the list of subscribers that take part in the auction.

30 13. A method according to claim 1, wherein the step of providing at least one potential buyer with information on a product in sale comprises the steps of:
forming a short message including information on a product in sale;
transferring said short message from the auction management system to at least one potential buyer; and
reading said information from said short message for determining the product information by said at least one potential buyer.

35 14. A method according to claim 13, wherein the information on a product in sale comprises product type and upset price or latest offer.

15. A system for performing electronic auctions, comprising:
 - means for providing at least one potential buyer with information on a product in sale;
 - means for obtaining a purchase offer for a product from a potential buyer;
- 5 means for receiving the information on the purchase offer from the potential buyer to an auction management system;
- means for providing an acceptance of said purchase offer;
- wherein the means receiving the information on the purchase offer from the potential buyer to the system comprises:
 - 10 means for receiving a short message from the buyer to the system; and
 - means for reading said information on a new offer of the potential buyer from said short message for determining the purchase offer of said potential buyer.

16. A system according to claim 15, wherein said information on a new offer of
- 15 the potential buyer includes at least the following information:
 - product identifier,
 - offered monetary amount, and
 - buyer identifier.

- 20 17. A system according to claim 16, further comprising means for initiating a payment of said purchase, and the use of said buyer identifier to collect funds from said buyer.
18. A system according to claim 15, wherein said product is a new article, a
- 25 secondary market article, service or a collectible.

19. A system according to claim 15, comprising means for the acceptance of the purchase offer based on a determined point of time.

- 30 20. A system according to claim 15, comprising means for the acceptance of the purchase offer based on a determined time period after the receiving the latest purchase offer.
21. A system according to claim 15, comprising means for recognizing the purchase offer identifiers based on the location of the concerned identifier field in the short message.

22. A system according to claim 15, comprising means for recognizing the purchase offer identifiers of the short message based on at least one separating character between two identifier fields.

5 23. A system according to claim 15, comprising means for conveying the payment of the purchase via the mobile system operator.

24. A system according to claim 15, comprising means for identifying the buyer on basis of an identifier of a subscriber connection in the mobile system received
10 from the mobile communications system within the short message.

15 25. A system according to claim 15, further comprising means for transferring an initial short message from a mobile station to the auction management system and means for storing the mobile station identity information on a list of subscribers that take part in the auction.

20 26. A system according to claim 25, further comprising means for transferring a termination short message from a mobile station to the auction management system and means for removing the mobile station identity information from the list of subscribers that take part in the auction.

25 27. A system according to claim 15, wherein the means for providing at least one potential buyer with information on a product in sale comprises:
means for forming a short message including information on a product in sale;
means for transferring said short message from the auction management system to at least one potential buyer; and
means for reading said information from said short message for determining the product information by said at least one potential buyer.

30 28. A system according to claim 27, wherein the information on a product in sale comprises product type and upset price or latest offer.

29. A system according to claim 15, comprising one or more communications ports to receive a purchase offer via the Internet.

35 30. A system according to claim 15, comprising means to transmit information to the buyer on the acceptance of the buyer's purchase offer.

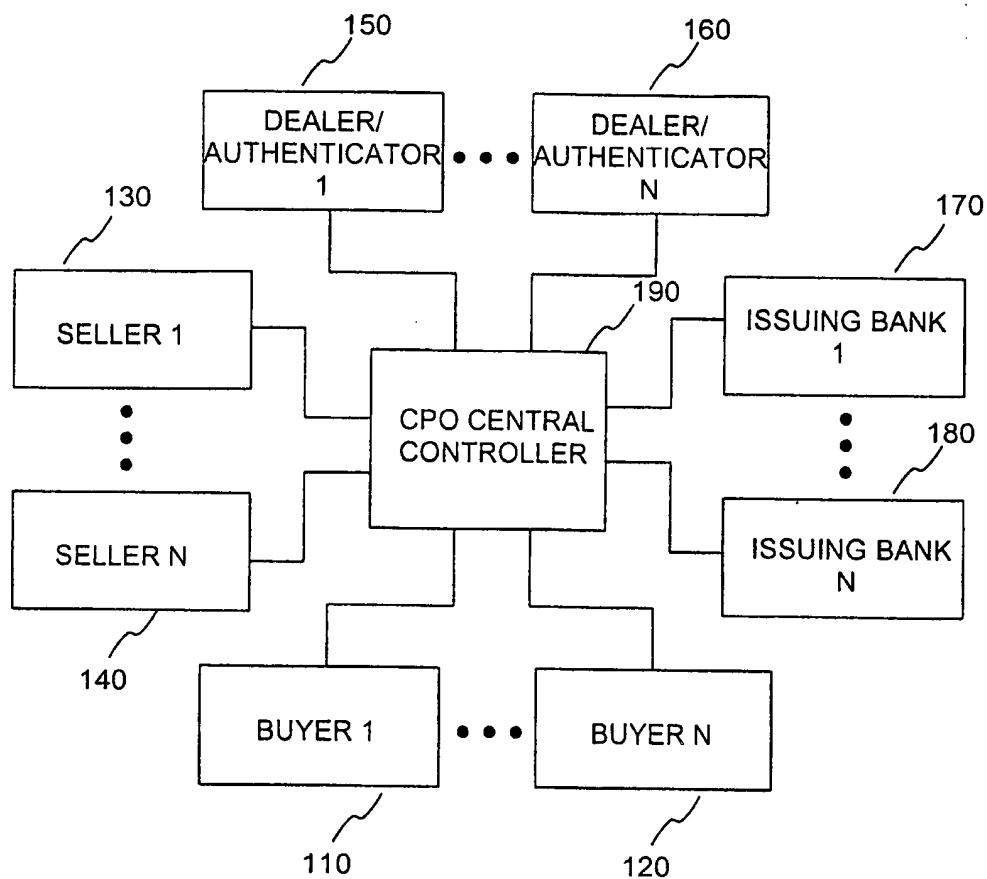


FIG. 1
PRIOR ART

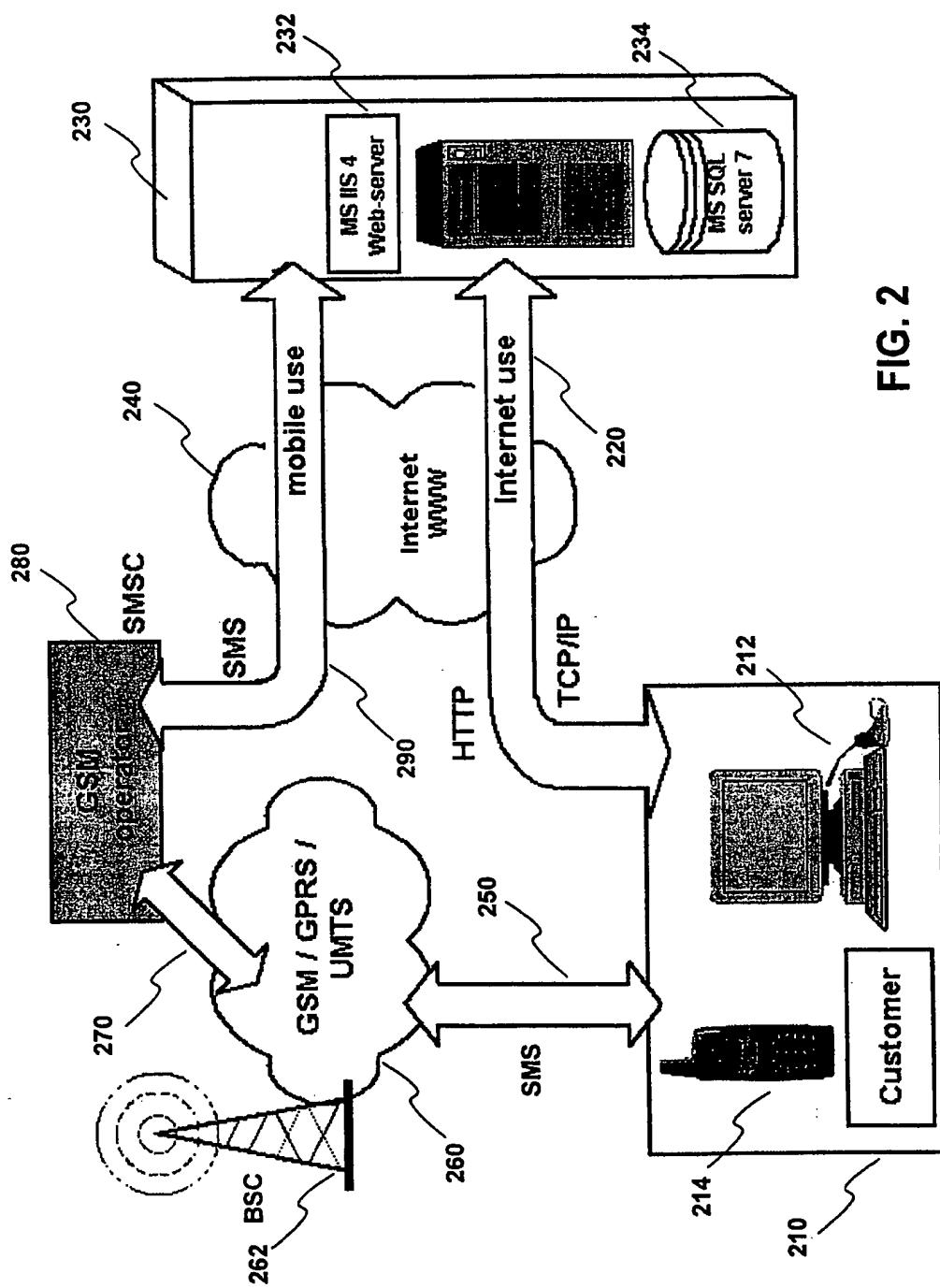


FIG. 2

3/4

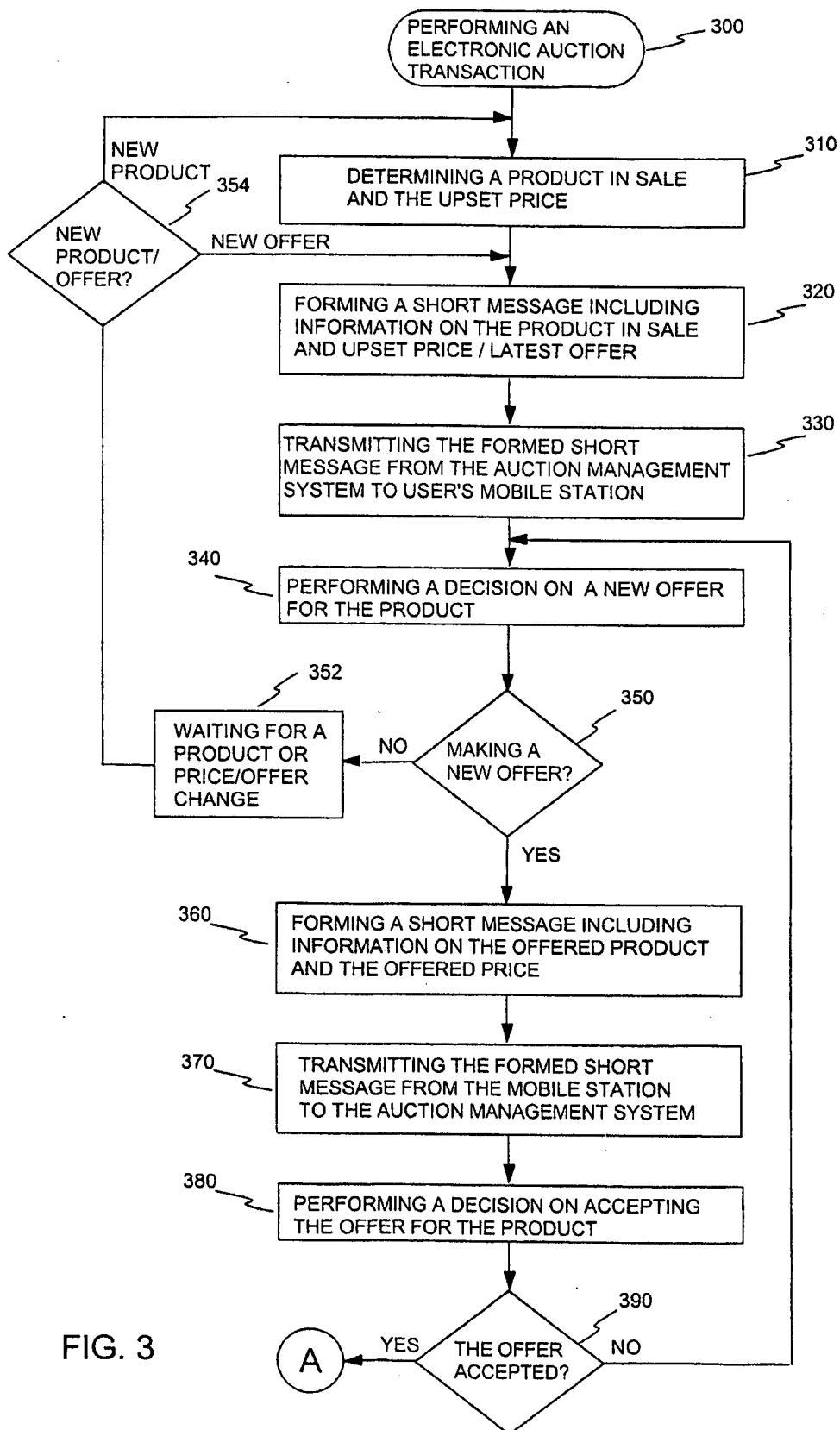


FIG. 3

4/4

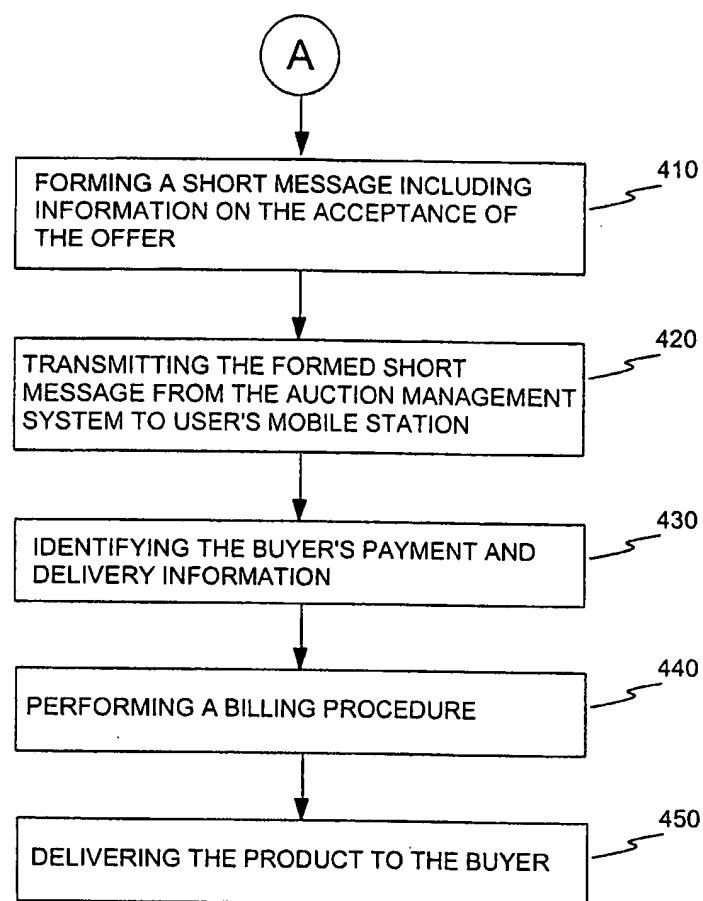


FIG. 4

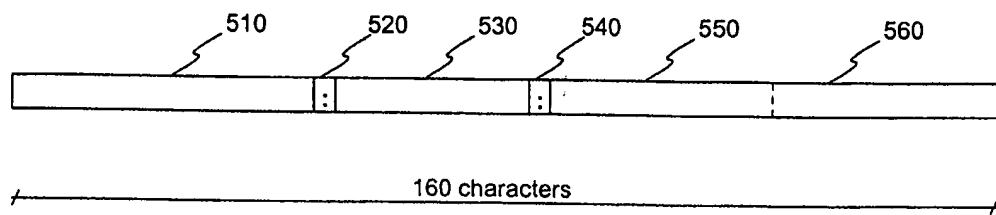


FIG. 5

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